AMENDMENTS TO THE CLAIMS

1. (Original) A projection lens having an object plane and an image plane and comprising objectwise to imagewise:

a first lens group having negative refractive power;

a second lens group having a positive refractive power;

a third lens group having a negative refractive power;

fourth, fifth and sixth lens groups having overall positive refractive power;

the projection lens having a numerical aperture of at least about 0.85; and

wherein the projection lens has a 1½ waist construction with a ½ waist being defined in the first lens group and a primary waist being defined in the third lens group.

2. (Original) The projection lens of claim 1, wherein each of the lens elements in the third lens group has a negative refractive power.

3. (Original) The projection lens of claim 1, wherein each of the lens elements in the fourth lens group has a positive refractive power.

4. (Original) The projection lens of claim 1, wherein the fifth lens group has at least five lens elements with at least four lens elements in the fifth lens group having positive refractive power.

5. (Original) The projection lens of claim 1, wherein a most object forward lens element of the first lens group has strong positive refractive power which in part defines the ½ waist in the first lens group.

6. (Original) The projection lens of claim 1, wherein the first lens group has more lens elements with negative refractive power than lens elements with positive refractive power.

7. (Original) The projection lens of claim 1, wherein a conjugate aperture stop is located between the fourth lens group and the fifth lens group.

8. (Original) The projection lens of claim 1, wherein the projection lens includes at least six aspheric surfaces.

9. (Original) The projection lens of claim 1, wherein the first six object forward lens elements are free of convex aspheric surfaces.

10. (Currently Amended) The projection lens of claim 1, wherein a diameter of each of the first five object forward lens elements is about equal to a diameter of the object ~~plane~~.

11. (Currently Amended)The projection lens of claim 1, wherein a ~~Ca/Cb~~ C_a/C_b ratio of less than 1.60 is maintained on convex aspheric surfaces that are associated with either one of the two most object forward lens elements of the system.

12. (Currently Amended) The projection lens of claim 1, wherein a ~~Ca/Cb~~ C_a/C_b ratio of less than 2.35 is maintained on convex aspheric surfaces that are associated with either the third or fourth most object forward lens elements.

13. (Currently Amended) The projection lens of claim 1, wherein a first or second most object forward lens element has a concave aspheric surface and a ~~Ca/Cb~~ C_a/C_b ratio is maintained at greater than or equal to about 0.70.

14. (Currently Amended) The projection lens of claim 1, wherein a third or fourth most object forward lens elements has a concave aspheric surface and a ~~Ca/Cb~~ C_a/C_b ratio is maintained at greater than or equal to about 0.45.

15. (Original)The projection lens of claim 1, wherein negative refractive power is concentrated in a ½ waist formed in the first lens group and a primary waist formed in the third lens group.

16. (Original) The projection lens of claim 1, wherein the fourth and fifth lens groups are free of lens elements that have aspheric surfaces.

17. (Currently Amended) A projection lens having an object plane and an image plane and comprising objectwise to imagewise:

a first lens group having negative refractive power;

a second lens group having a positive refractive power;

a third lens group having a negative refractive power;

fourth, fifth and sixth lens groups having overall positive refractive power;

the projection lens having a numerical aperture of at least about 0.85; and

wherein the projection lens has a 1½ waist construction with a ½ waist being defined in the first lens group and a primary waist being defined in the third lens group ~~The projection lens of claim 1~~, wherein the projection lens has a blank mass of about 94 kg and a CHL equal to about 400 nm/pm.

18. (Currently Amended) A projection lens having an object plane and an image plane and comprising objectwise to imagewise:

a first lens group having negative refractive power;

a second lens group having a positive refractive power;

a third lens group having a negative refractive power;

fourth, fifth and sixth lens groups having overall positive refractive power;

the projection lens having a numerical aperture of at least about 0.85; and

wherein the projection lens has a 1½ waist construction with a ½ waist being defined in the first lens group and a primary waist being defined in the third lens group ~~The projection lens of claim 1~~, wherein the projection lens is characterized as having a W value of from about 0.11 to about 0.13 where W is equal to:

$W = \left(\frac{1}{N} \sum_{j=1}^{j=N} w_j^2 \right)^{\frac{1}{2}}$, where N is the number of surfaces and w_j is the weighted refractive power of surface J given by: $w_j = \frac{1 \quad y_j \qquad n' - n}{1 - m n' u'_N \qquad R_j}$, where, n and n' are the indices of refraction before and after refraction at the surface j, R is the surface radius of curvature, y is the marginal paraxial ray height and $n'u'_N$ is the product of the index of refraction and marginal paraxial ray slope angle in image space.

19. (Currently Amended) A projection lens having an object plane and an image plane and comprising objectwise to imagewise:

a first lens group having negative refractive power;

a second lens group having a positive refractive power;

a third lens group having a negative refractive power;

fourth, fifth and sixth lens groups having overall positive refractive power;

the projection lens having a numerical aperture of at least about 0.85; and

wherein the projection lens has a 1½ waist construction with a ½ waist being defined in the first lens group and a primary waist being defined in the third lens group ~~The projection lens of claim 1~~, wherein the projection lens is characterized as having an S value, which measures a degree of symmetry to which the surfaces of the lens system are used, of from about 0.19 to about 0.25 where S is equal to: $S = \left(\frac{1}{N} \sum_{j=1}^{j=N} s_j^2 \right)$, where S_j is given by:

$$s_j = \frac{1}{1 - m\,m\,\bar{i}_{stop}\left(n'u'_N\right)} \bar{A}_j \Delta\left(\frac{u}{n}\right)_j ,$$

where the term $\bar{A} = n\bar{i}$ is the product ~~of the production~~ of an index of refraction and a chief ray angle of an incidence at surface at j and the term $\Delta(u/n) = u'/n' - u/n$ is the condition for aplanatism of confocality.

20. (Currently Amended) The projection lens of claim 1, wherein at least one lens element in the sixth lens group includes at least one aspheric surface.

21. (Original) The projection lens of claim 1, wherein the numerical aperture is at least about 0.92.

22. (Original) A projection lens having an object plane and an image plane and comprising objectwise to imagewise:

a first lens group having negative refractive power; and

at least three other lens groups having a positive refractive power and at least one other lens group having a negative refractive power, wherein the six most object forward lens

elements are free of aspheric convex surfaces and the first lens group includes a ½ waist construction, while a primary waist is defined in the at least one other lens group.

23. (Original) The projection lens of claim 22, wherein the lens includes at least 25 lens elements and at least six aspheric surfaces.

24. (Original) The projection lens of claim 22, wherein the projection lens has a numerical aperture of at least about 0.85.

25. (Original) The projection lens of claim 22, wherein the at least one other lens group includes at least four lens elements that each has a negative refractive power.

26. (Original) The projection lens of claim 22, wherein the first lens group has at least three lens elements that each has a negative refractive power.

27. (Original) The projection lens of claim 22, wherein the projection lens includes at least 25 lens elements and at least nine aspheric surfaces.

28. (Original) The projection lens of claim 22, wherein a most object forward lens element has a strong positive refractive power.

29. (Currently Amended) A projection lens having an object plane and an image plane and comprising objectwise to imagewise:

a first lens group formed of at least four lens elements and having a negative refractive power and defining a (secondary) 1/2 waist of the projection lens;

an intermediate lens group having a negative refractive power and defining a primary waist of the projection lens; and

wherein the six most object forward lens elements are free of aspheric convex surfaces and wherein the two most image forward lens groups defined by at least 6 lens elements are free of aspheric surfaces.

30. (Original) A projection lens having an object plane and an image plane and comprising objectwise to imagewise:

a first lens group having negative refractive power;

a second lens group having a positive refractive power;

a third lens group having a negative refractive power;

fourth, fifth and sixth lens groups having overall positive refractive power; and

wherein the projection lens has a 1½ waist construction and wherein a ½ waist is defined in the first lens group and a primary waist is defined in the third lens group and is free of aspheric surfaces and wherein the fourth and fifth lens groups are free of aspheric surfaces.

31. (New) The projection lens of claim 30, comprising a plurality of aspheric surfaces.